UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,076	05/01/2001	David L. Dooley	ZETT 2148	6972

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ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/847,076	DOOLEY, DAVID L.
	Examiner	Art Unit	
	Ian N. Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *05 October 2005*.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-18* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1,2,7,10-12 and 17* is/are rejected.
7) ☒ Claim(s) *3-6,8,9,13-16 and 18* is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 8 and 18 are objected to because of the following informalities:

Claim 8 recites "**a first cell**" in line 9 and "**a first cell**" in line 14. It is unclear whether "a

first cell" in line 14 is the same cell as recited in line 9.

Claim 18 is also objected for the same reason as stated above in claim 8.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1,2,7,10,11,12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Schwartz (US006529478B1) in view of Epps (US006721316B1).

Regarding Claims 1 and 11, Schwartz discloses an apparatus for receiving, storing and

then forwarding data in a plurality of incoming packets (see FIG. 2, Switching node 11(n); see

col. 5, line 1-55), the apparatus comprising:

a memory (see FIG. 3, 6; packet memory 31 and 51 of port module and storing means of

interport packet switch 22; see col. 3, line 25-40; see col. 6, line 53 to col. 7, line 4);

a. first means (see FIG. 2-3, Input port module 20(N)) for receiving each incoming packet

and for generating a cell sequence corresponding to the incoming packet, wherein each cell of

the cell sequence packet contains a separate portion of the data included in the incoming packet

(or a uniform size) (see col. 5, line 66 to col. 6, line 10; see col. 10, line 41-65; Input port module

divides incoming packet into a series/sequence of equal/uniform segments/cells (i.e. packet

meta-data));

b. second means (see FIG. 2, 5; packet meta-data processor 23) for making a

determination with respect to at least one cell of each generated cell sequence to whether to

discard the cell or to store the cell the memory (see col. 7, line 35-65; col. 8, line 14-35;

processor determines whether to discard/drop the segments of packet or store/queuing them),

c. third means, for one of storing (see FIG. 2-4, 6, port module 20(N)-21(N), interport

packet switch 22) for storing/queuing) or discarding the cell in the memory (see FIG. 2-3, Input

port module 20(N) for discarding/dropping) in accordance with the determination made by the

second means (see col. 7, line 1 to col. 8, line 14-35), and for reading cells out of the memory

and forwarding them (see FIG. 2-4, 6, port module 20(N)/21(N) reads/retrieves and forward the

segmented meta-data from the memory; see col. 5, line 16 to col. 6, line 11, 35-52; see col. 7,

line 65 to col. 9, line 30), and

d. fourth means (see FIG. 2, 5; packet meta-data processor 23) for repetitively generating

a status of an number of cells stored in the memory during a period immediately preceding

generation of a status, wherein the determination made by the second means is a function of the

generated status (see FIG. 3-6; status signals to/from processor 23 regarding the buffer status

where the packet meta-data are stored/queued;; see col. col. 7, line 35-65; col. 8, line 14-35; see col. 9, line 25 to col. 10, line 67).

Schwartz does not explicitly disclose an estimate of an average number of cells. However, determining an estimate of an average number of cells in the queue/memory/buffer for discarding is well known in the art as Random Early Dropping/Discarding (RED) or weighted RED (WRED) according to an average queue depth where the average number of cells are stored. In particular, Epps teaches repetitively generating an estimate of an average number of cells stored in the memory during a period immediately preceding generation of the estimate, wherein the determination made is a function of the generated estimate (see col. 17, line 5-22; see col. 20, line 14-18; see col. 27, line 33-54; see col. 27, line 60 to col. 31, line 60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to estimate an average number of cells for discarding/dropping, as taught by Epps in the system of Schwartz, so that it would avoid congestion; see Epps col. 29, line 12-21.

Regarding Claims 2 and 12, Schwartz discloses b4) making the determination as to whether to discard the cell or to store the cell in the memory; b5) one of storing or discarding the cell in the memory in accordance with determination as described above in claim 1 and 11. Epps further discloses

b1) fifth means for assigning each cell a discard weight that is a function of the estimate generated by the fourth means (see FIG. 24,25,31; col. 33, line 20-32)

b2) sixth means generating a random number (see col. 29, line 59-67; see col. 32, line 12-24, 39; see col. 39);

b3) seventh means for comparing the cell's assigned discard weight to the random

number to produce result data indicting whether the discard weight exceeds a value of the

random number (see FIG. 24,25,31; using WRED/RED; see col. 10-25, 26-40);

b4) eighth means for making the determination as to whether to discard the cell or to

store the cell in the memory in response to the result data (see FIG. 24,25,31; using

WRED/RED; see col. 31, line 8-20; see col. 32, line 4-67),

b5) one of storing or discarding the cell in the memory in accordance with determination

at step b4 (see FIG. 24,25,31; using WRED/RED; see col. 31, line 8-20; see col. 32, line 4-67).

Therefore, it would have been obvious to one having ordinary skill in the art at the time

the invention was made to assign/generate/compare and determine an average number of cells

for discarding/dropping, as taught by Epps in the system of Schwartz, so that it would avoid

congestion; see Epps col. 29, line 12-21.

Regarding Claims 7 and 17, Schwartz discloses a1) means for multiplying a previously

generated estimate of an average number of cells stored in the memory by a value of a parameter

X between 0 and 1 to produce a first value (see FIG. 24,25,31; using WRED/RED; see col. 31,

line 8-20; see col. 32, line 4-67),

a2) means for multiplying a number of cells currently stored in the memory by a quantity

(1-X) to produce a second value (see FIG. 24,25,31; using WRED/RED; see col. 31, line 8-20;

see col. 32, line 4-67), and

a3) means for generating a next estimate of the average number of cells stored in the

memory, as a sum of the first and second value (see FIG. 24,25,31; using WRED/RED; see col.

31, line 8-20; see col. 32, line 4-67);

a4) iteratively repeating steps a1 through a3 (see FIG. 24,25,31; using WRED/RED; see col. 31, line 8-20; see col. 32, line 4-67).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to multiply and generate/compare average number of cells, as taught by Epps in the system of Schwartz, so that it would avoid congestion; see Epps col. 29, line 12-21.

Regarding Claim 10, the combined system of Schwartz and Epps discloses wherein the estimated of the average number of cells stored in the memory as described above in claim 1. Schwartz discloses repetitively generating a status whenever there is a change in a number of cell currently stored in the memory (see FIG. 3-6; status signals to/from processor 23 regarding the buffer status where the packet meta-data are stored/queued;; see col. col. 7, line 35-65; col. 8, line 14-35; see col. 9, line 25 to col. 10, line 67). Epps further discloses estimated at step whenever there is a change in a number of cell currently stored in the memory (see FIG. 24, 25; see col. 28, line 61-65; see col. 29, line 44-52; see col. 33-41; see col. 30, line 15-39; see col. 31, line 1-38; see col. 32, line 35-55).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide estimate an average number of cells for discarding/dropping, as taught by Epps in the system of Schwartz, so that it would avoid congestion; see Epps col. 29, line 12-21.

Allowable Subject Matter

4.   **Claims 3-6,9,13-16** are objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the base

claim and any intervening claims.

5.   **Claims 8 and 18** are objected to in accordance with the objection in paragraph 1 and as

being dependent upon a rejected base claim, but would be allowable if rewritten in independent

form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6.   Applicant's arguments with respect to claims 1,2,7,10,11,12, and 17 have been considered

but are moot in view of the new ground(s) of rejection.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The

examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

INM
12-29-05

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